

REMARKS

Claims 22-46 are all the claims pending in the application.

On page 2 of the Office Action, in paragraph 5, claims 22-46 rejected under 35 U.S.C. 103(a) as being unpatentable over Cunningham et al in view of Gottschalk et al '942.

Applicants respectfully traverse the rejection.

The Examiner indicates that the amount of Cunningham's ingredient [D], which can be an organic dye like a cationic dye, can be 0.001% - 20%, especially 0.1% - 5% by weight (see column 22, lines 56-58), and the Examiner states that at the extreme points, ingredient [D] would meet the claimed limitation wherein the organoborate compound is in a proportion of at least four moles per mole of organic dye (e.g., if 0.001% of the dye is used in Example 34 and 35 wherein 0.4% of the organoborate compound is used). The Examiner considers that it would have been *prima facie* obvious to use the ingredient [D] in an amount of 0.001% in Example 34 or 35 and reasonably expect the same or similar results as disclosed in Cunningham et al for sensitivity at longer wavelengths, thus meeting the presently claimed proportions.

Applicants respectfully disagree.

Cunningham discloses that 0.4% of an organoboron compound is used in Examples 34 and 35, and the amount of Cunningham's ingredient [D] is described at column 22, lines 56-58. When these disclosures of Cunningham are combined, it is found that a proportion of the organoboron compound to the organic dye may be preferably 0.4% / 20% to 0.4% / 0.001% (= 0.02 to 400), and more preferably 0.4% / 5% to 0.4% / 0.1% (= 0.08 to 4).

In contrast, the proportion of the organoboron compound in claims 22, 34, 35, 36, 40 and 43 is at least four moles of the organoboron compound per mole of the organic dye. Therefore, the proportion recited in the claims is not taught or suggested by Cunningham.

Accordingly, Cunningham and Gottschalk do not teach or suggest each and every element of claim 1, as is required to establish a *prima facie* case of obviousness under §103.

Furthermore, Cunningham does not disclose or suggest the prominent effects of the present invention, and one of ordinary skill in the art would not expect the effects of the present invention based on the disclosures of the cited references. Moreover, the present invention provides unexpectedly superior results.

In this regard, a Declaration under 37 C.F.R. §1.132 executed by Mr. Yuichi Fukushige is submitted herewith. Mr. Fukushige prepared photopolymerizable composition (A) comprising the dye compound of Example 9 and the borate compound of Example 34 and a photopolymerizable composition (B) comprising the dye compound of Example 9 and the borate compound of Example 35. Photo- and heat-sensitive recording materials were prepared using the photopolymerizable compositions (A) and (B). In addition, photo- and heat-sensitive recording materials (C) and (D) were prepared using a proportion of the dye to borate compound in Examples 34 and 35, by changing the amount of the dye from 0.3% to 0.001%. As shown in Table 1 on page 8 of the Declaration (reproduced below), the photo- and heat-sensitive recording materials prepared using the photopolymerizable compositions (A) and (B) inferior density and low fog compared to the photo- and heat-sensitive recording material of the present invention.

Table 1

Examples of the present specification	Borate/dye (molar ratio)	Sensitivity (mJ/cm ²)	D _{max}	D _{min}	D _{min-S} (after thermal treatment)
Example 1	4	10.4	2.3	0.11 (M)	0.13
Example 8	4	0.5	1.7	0.1 (Y)	0.11
Comparative Example 1	0.5	100	2.3	0.55 (M)	0.58
Comparative Example 2	0.5	50	2.2	0.6 (C)	0.65
Cunningham	Borate/dye (molar ratio)	Sensitivity (mJ/cm ²)	D _{max}	D _{min}	D _{min-S} (after thermal treatment)
Composition (A) Dye:9/Borate:m	1.83	250	2.1	0.95 (M)	0.62
Composition (B) Dye:9/Borate:r	1.62	300	1.9	0.81 (M)	0.76
Composition (C) Dye:9/Borate:m	303 (= 0.4%/0.001%)	0.3	2.2	0.11 (M)	0.12
Composition (D) Dye:9/Borate:r	332 (= 0.4%/0.001%)	0.4	2	0.10 (M)	0.13

Accordingly, the present invention provides unexpected results compared to the cited art.

In addition, the Examiner asserts that if the amount of dye in Examples 34 and 35 were used in an amount of 0.001%, one of ordinary skill in the art would reasonably expect same or similar results as disclosed in Cunningham. However, as shown above, if Examples 34 and 35 of Cunningham are modified such that the ratio of the organoboron compound and the organic dye by using 0.001% of dye, the properties of the photo- and heat-sensitive recording medium are not what one of ordinary skill in the art would not expect, i.e., the properties are not the same or similar to those of Examples 34 and 35. Therefore, one of ordinary skill in the art

would not be motivated to use a ratio of organoboron compound to organic dye of at least four based on the disclosure of Cunningham.

Applicants wish to emphasize that the ratio of the organoboron compound and the organic dye is an element (feature) of the present invention. Therefore, the significance of the results of Compositions C and D in the Declaration is that if the ratio of the organoboron compound and the organic dye disclosed in Cunningham were adjusted within the range of the present invention, the results would be improved. That is, this proves that the invention of Cunningham is significantly less effective than the present invention. Therefore, the invention of Cunningham does not disclose the specific range of the present invention, nor the effects achieved by the range.

For at least the above reasons, it is respectfully submitted that claims 22-46 are patentable over the cited art.

Conclusion

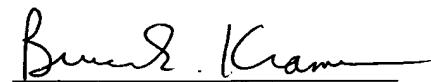
In view of the foregoing, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

RESPONSE UNDER 37 C.F.R. § 1.111
U.S. Application No. 09/894,827

Attorney Docket No. Q64663

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Respectfully submitted,



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